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PRE-APPEAL BRIEF REQUEST FOR REVIEW

Docket Number (Optional):

4195-033/R8706US

I hereby certify that this correspondence is being electronically submitted.

Date: **April 21, 2009**

Signature:

Typed or printed name: **KATHY MCDERMOTT**

Application Number:

10/577,753

Filed:

April 27, 2006

First Named Inventor:

Catherine Daines

Art Unit:

1797

Examiner:

**MR. LUCAS A.
STELLING**

Applicant requests review of the final rejection in the above-identified application. No amendments are being filed with this request

This request is being filed with a notice of appeal.

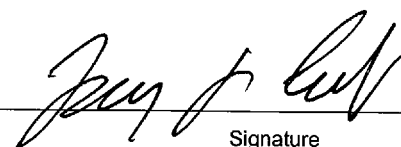
The review is requested for the reason(s) stated on the attached sheet(s).

Note: No more than five (5) pages may be provided.

I am the

☐

applicant/inventor


Signature☐

assignee of record of the entire interest.

See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.

(Form PTO/SB/96)

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Registration Number: 25620(919) 854-1844

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attorney or agent acting under 37 CFR 1.34.

Registration Number if acting under 37 CFR 1.34 _____

April 21, 2009

Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below*.

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*Total of _____ form(s) is/are submitted.

*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. ¹ Applicant's unique citation designation number (optional). ² Applicant is to place a check mark here if English language Translation is attached. This collection of information is required by 37 CFR 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. **SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.**

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of
Daines, et al.

Serial No.: **10/577,753**

Filed: **April 27, 2006**

For: **Installation and Method for the
Purification of an Aqueous Effluent by
Means of Oxidation and Membrane
Filtration**

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PATENT PENDING

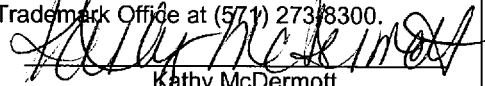
Examiner: Lucas A. S'telling

Group Art Unit: 1797

Confirmation No.: 2835

Docket No: **4195-033**

Mail Stop Amendment
Commissioner for Patents
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April 21, 2009	
Date	Kathy McDermott
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PRE-APPEAL BRIEF

Applicant submits the following remarks in support of the Pre-Appeal Request for Review being filed concurrently with a Notice of Appeal.

Claims 27-42, 44-50, and 53-57 are currently pending with claims 27 and 50 being independent. Both of the independent claims stand finally rejected as being obvious over U.S. Patent No. 5,607,593 (Cote) in view of U.S. Patent No. 4,076,617 (Bybel). The § 103 rejections fail, however, because the Patent Office fails to make out a *prima facie* case of obviousness.

Claim 27 is directed to a method of treating an aqueous influent containing organic matter. The method includes directing influent into the reactor and injecting an oxidizing gas into the reactor. The oxidizing gas oxidizes organic material in the influent and then a portion of the influent is filtered through an immersed membrane filtration system. At least a portion of the non-permeated water is recirculated from the reactor, through a recirculation line and back into the reactor. Further, at least a portion of the oxidizing gas is recirculated from the reactor through a gas recirculation loop and back into the reactor. For reference claim 27 appears in its entirety below.

27. A method of treating an aqueous influent containing organic matter in a single chamber reactor having an immersed membrane filtration unit and a bed of catalyst material disposed in the reactor, the method comprising:
- a. directing the influent into the reactor;
 - b. injecting an oxidizing gas into the reactor containing influent;
 - c. directing the influent through the bed of catalyst material and forming treated water, wherein the catalyst material promotes the oxidation reaction of organic material in the influent, or promotes the absorption of organic material by the bed of catalyst material;
 - d. filtering at least one portion of the treated water in an immersed membrane filtration unit and forming a filtered effluent;
 - e. bypassing the immersed membrane filtration unit with at least a second portion of the treated water such that the second portion of the treated water is non-permeated treated water;
 - f. directing the filtered effluent from the reactor;
 - g. recirculating at least a portion of the non-permeated treated water from the reactor, through a recirculation line and back into the reactor; and
 - h. recirculating at least a portion of the oxidizing gas from the reactor, through a gas recirculation loop and back into the reactor.

Claim 27 explicitly requires recirculating water through "a recirculation line" and recirculating oxidizing gas through "a gas recirculation loop." Neither Cote nor Bybel, alone or in combination, teaches or suggests providing two separate recirculation lines.

The Office Action acknowledges that Cote fails to teach or suggest recirculating ozone through a separate gas recirculation loop. Accordingly, the Examiner suggests modifying Cote to include an ozone recirculation loop as described in Bybel. However, one of ordinary skill in the art would not place a separate ozone recirculation loop into the Cote filtration device.

Cote describes a filtration device in which water is recirculated through a recirculation loop 20. See, Cote, Fig. 7. The recirculation loop 20 is in communication with ozone generator 22. Water flowing through the recirculation loop 20 is mixed with the ozone from ozone generator 22 to form "a biphasic water+ozone mixture designed to be injected into the membranes..." Cote, col. 11, line 42. Thus, recirculation loop 20 is designed to carry both recirculating water and ozone into the filtration device.

Bybel describes an ozone treatment reactor in which ozone is recirculated through a recirculation loop 42. See, Bybel, Fig. 2. Ozone is generated in ozone generator 45 and injected into the reactor 30. Residual ozone is collected at valve 41 and directed through recirculation loop 42 where it is added to newly generated ozone from the ozone generator 45. See, Bybel, col. 8, lines 63-38 and Fig. 2. Then, the residual ozone and the newly generated ozone are directed into the reactor 30. See, Bybel, col. 8, lines 63-38 and Fig. 2.

The combination of references does not teach or suggest providing a separate gas recirculation loop. Cote describes that the recirculation loop 20 already delivers a biphasic of water and ozone into the filtration device. Thus, the existing recirculation loop 20 is capable of delivering ozone to the filtration device. Bybel describes that the ozone recirculation loop should be placed in-line with the ozone generator. However, Cote's recirculation loop 20 is already in-line with ozone generator 22. Thus, at most, the combination of references suggests recirculating ozone through Cote's existing recirculation loop 20.

The considered teachings of Cote and Bybel teach against the proffered modification of the primary reference of Cote. Cote teaches a single recirculation line that can handle both water and ozone. As described above, ozone generator 22 is operatively connected into the single biphasic line 20 of Cote. Bybel also includes a single line 42 including an ozone generator 45 that generates ozone and injects ozone into the reactor 30. If it were obvious to recirculate ozone in Cote, which Applicants deny, then the only rational and logical conclusion would be to recirculate ozone through Cote's biphasic line 20 that already handles both water

and ozone. Respectfully, it would not be logical or reasonable to add a separate line to do what Cote's existing line will already do.

Therefore, neither Cote nor Bybel, alone or in combination, teaches or suggests providing a separate gas recirculation loop to a filtration device. Instead, the combination of references, at most, suggests combining the recirculation of water and ozone into a single recirculation loop. As such, the combination of the references necessarily fails to teach or suggest each limitation of claim 27. Accordingly, claim 27 and its dependent claims are non-obvious over the cited references.

The other independent claim 50 also stands rejected as being obvious over Cote in view of Bybel. Claim 50 is directed to a system for treating an aqueous influent containing organic matter. For reference, claim 50 appears below.

50. A system for treating an aqueous influent containing organic matter comprising:
- a. a single chamber reactor having an inlet through which the aqueous influent passes into the reactor;
 - b. a bed of catalyst material disposed in a lower portion of the reactor for treating the aqueous influent and producing treated water;
 - c. a membrane filtration system disposed above the bed of catalyst material and in an upper portion of the reactor for filtering the treated water and producing a filtered effluent;
 - d. an oxidizing gas inlet disposed in the reactor for directing an oxidizing gas into the reactor;
 - e. a recirculation line extending exteriorly of the reactor for directing a non-permeated treated water stream from the reactor, through the recirculation line and back into the reactor;
 - f. an oxidizing gas recirculation loop extending exteriorly of the reactor for directing oxidizing gas from the reactor, through the recirculation loop and back into the reactor; and
 - g. wherein the oxidizing gas inlet is arranged in the reactor such that the oxidizing gas inlet directs an oxidizing gas therefrom and into the reactor and through the aqueous influent in the reactor.


Claim 50 contains language similar to that of claim 27. In particular, claim 50 requires a recirculation line for directing non-permeated treated water from the reactor, through the recirculation line and back into the reactor. In addition, claim 50 requires an oxidizing gas recirculation loop for directing oxidizing gas from the reactor, through the recirculation loop and back into the reactor. Accordingly, for similar reasons as those described above for claim 27,

claim 50 defines patentable subject matter over the cited art. Since the independent claim 50 is allowable over the cited art, so, too, are its respective dependent claims.

In light of the foregoing remarks, Applicants respectfully requests that the Panel overturn all rejections and allow all pending claims.

Respectfully submitted,

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Dated: April 21, 2009

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